



Annual Index of Articles: 1989

ADMIXTURES

Check Your Admixtures after Winter Storage: Freezing can damage some admixtures. This article tells how to revive a frozen admixture and how to check for admixture uniformity. 2 pp; 89:320

Permeability of Concrete: High-range water reducers, silica fume, and latex emulsions can make concrete less permeable to liquids, gases, and ions that can cause deterioration. 2 pp; 89:870

Using Admixtures Successfully: Choose the best admixture program for an application by defining performance goals, understanding admixture effects, and using uniform procedures. 3 pp; 89:113

ALKALI-SILICA REACTION

Countering Alkali-silica Reaction in Concrete: Alkali-silica reactions (ASR) were never a problem in Britain before 1976. Then researchers found 100-300 structures they believed were affected by it. The presence of ASR doesn't necessarily mean the concrete was of low quality or that the structures had failed. Cracking was a problem however. One way to control ASR is to limit the alkali content of concrete made with potentially reactive aggregates. 3 pp; 89:948

ARCHITECTURAL CONCRETE

Board Marked Concrete Made to Order: A photo essay on board marked architectural concrete of the Orlando Public Library shows closeups of wood-grain texture. Building duplicates style and texture of the 20-year-old library so that new and old construction merge in a monumental city block of architectural concrete. 3 pp; 89:140

Brick-look Concrete: A special brick-design paper pattern and dry shake color hardener are used to make concrete flatwork that looks like brick. 3 pp; 89:316

Forming Convention Center Fins: Intricate pattern of recesses in the arches and beams of the 100-foot-high fins presented a formwork challenge to builders of the San Diego Convention Center. Custom steel forms were carefully detailed to establish crisp smoothness in the white architectural concrete. 4 pp; 89:537

Marketing: The Beauty of Concrete Gets Attention for Products and Services: How manufacturers, suppliers, and associations are using beauty of concrete in current marketing efforts. Includes color reproductions of numerous brochure covers. 3 pp; 89:478

Precast Matches Old Marble: The Harvard Medical School's new building received a Precast/Prestressed Concrete Institute design award for its use of architectural precast concrete which matches the classical buildings around it in a contemporary way. This building completes a quadrangle started in 1906. The center atrium is now enclosed. 2 pp; 89:866

Rosenthal Library Combines Precast with Cast-in-place Work: Award-winning Rosenthal Library at Queens College, New York, combines cast-in-place and precast concrete in a beautiful and functional structure. Fast-tracking, flexibility, and other advantages of concrete are described. 3 pp; 89:441

Who Says Concrete Is Beautiful? Shows varied examples of beautiful concrete submitted by *Concrete Construction* readers. Included are precast pavers in driveways, tilt-up sound barrier walls, an outdoor gallery for display of sculpture, a bridge in Michigan, an underground tank, and a corporate headquarters in white concrete. 4 pp; 89:459

Winning with Concrete: A pictorial essay presenting varied award-winning structures. Includes a parking deck, condominiums in Florida, a California car wash, the World Bank building in Washington, DC, and a floodwall on the Mississippi River. 6 pp; 89:467

ART

Alice in Wonderland Image Hidden in Concrete: Sculpture of Alice and the White Rabbit is made from colored precast concrete sections. 2 pp; 89:162

Formwork Becomes Art at National Building Museum: Artist and journeyman carpenter Linda Wysong created a performance sculpture called *Moving Circles—Art at Work*. Setting up the all-steel and steel-and-plywood panels and accessories took 2½ days. The assembly of the project was the art, not the finished product, which was taken down 3 days after it was finished. 2 pp; 89:586

Painting In and On Concrete: New York artist Glenn Booth paints in and on thin concrete panels, beginning with pigment rubbed in while the concrete is wet. His technique is described and two paintings, one framed in concrete, are shown. 2 pp; 89:475

BASEMENTS

Field Investigation of Residential Basement Problems: Suggests using a checklist to check basement problems such as cracking and leaking. Lists many questions to ask about the construction and history of the basement to determine what kind of repair will be necessary. 4 pp; 89:985

The First Steps in Building High-quality Poured Wall Foundations: Many color photographs help explain details of excavating that basement wall contractors should look for and how to build footings. Also includes methods for squaring foundation corners. 5 pp; 89:849

BRIDGES

Cable-stayed Bridge Completed across James River: Cable-stayed James River Bridge in Virginia, with a main span of 630 feet, is made up of twin segmental precast box girders. A series of transverse precast delta frames located at the section where the stays are anchored into the deck permits loads from both box girders to be transferred into the plane of suspension. Two single-shaft pylons carry the system of 13 stays. 3 pp; 89:775

(more)

Future Bridge Deck Slab Construction: Model tests and full-scale load tests show that bridge decks designed by the common elastic plate method are thicker and have more steel than necessary. Membrane forces produced by lateral confinement contribute to the excess strength. An empirical design method already adopted in Ontario considers degree of confinement, ratio of span to thickness, and percentage of reinforcement. It makes possible the economical standardization and prefabrication of deck reinforcement mats. 4 pp; 89:23

Torridge Bridge Combines Aesthetic Excellence with Construction Economy: A post-tensioned segmental box girder structure, the Torridge Bridge in England, was erected by the balanced cantilever method. Eight approximately equal spans totaling 2,132 feet were built with single-cell box segments having cantilever wings that extend width to 43.6 feet. An elegant bridge in a spectacular environment, it won The Concrete Society's top award in 1988. 4 pp; 89:47

CEMENT

New Cement Gains Strength Fast: A blended hydraulic cement with a proprietary addition gains strength rapidly and has good durability. Concrete made with the cement typically reaches 2000 to 3000 psi compressive strengths in 4 hours. 2 pp; 89:302

COLD WEATHER CONCRETING

Party Tents Make Good Enclosures for Winter Concreting: An Illinois contractor uses tents to keep workers busy through winter. Tents make it easy to thaw subgrade and reduce heating costs. 2 pp; 89:956

COLORING CONCRETE

Overhead and Underfoot: Concrete Is Beautiful: White ferrocement in the ceiling of the Menil Collection in Houston and black concrete in the entrance plaza of the Hayden Planetarium in New York provide dramatically unique aesthetic experiences, at the same time serving functional needs of these public spaces. Some design and construction details are presented. 3 pp; 89:453

CRACK REPAIR

Seal Cracks Carefully before Injecting with Epoxy Resin: Before injecting cracks it's important to ensure the cap is set up correctly so that epoxy won't leak. Gives steps for installing the cap, sealing leaks, and removing the cap. 2 pp; 89:544

DESIGN

Designing for Economy: Designers can reduce the cost of concrete construction by following rules given in the article. Rules cover formwork design, reinforcement, and concrete properties. 3 pp; 89:97

DURABILITY

Do It Right the First Time: By applying proven methods for producing durable concrete, designers and contractors can choose materials and methods needed to build structures that last. The article tells how to prevent freeze-thaw damage, reduce permeability, and minimize volume changes. It cautions against equating compressive strength with durability. 4 pp; 89:105

EQUIPMENT

Downsized Motor Graders: Optional attachments improve the versatility of downsized motor graders. Economical for smaller jobs, one worker can do all these site preparations with a single piece of equipment: initial ground breaking, rough grading, base compaction, fine grading, and cleanup of excess material. 2 pp; 89:394

Getting More from Your Forklift: Knowing the features of forklifts helps you make a good buying decision and helps you use the forklift productively. Safety tips and benefits of telescoping booms on forklifts are described. Shows a chart for calculating load capacity. 3 pp; 89:783

Mini-excavators Help Excavating Contractor Fill Market Niche: Contractors can use mini-excavators to work in close quarters, saving laborers a lot of pick and shovel work and sparing the landscape. 2 pp; 89:392

Pump and Conveyors Place Dam Concrete in up to Six Locations a Day: Describes how a contractor placed concrete on the Stacy Dam project near San Angelo, Texas. Workers placed about 100,000 cubic yards of reinforced concrete with two conveyors and a boom pump and were able to move a lot faster than with a crane and bucket. 2 pp; 89:814

Safety and Maintenance Tips for Mini-excavators: Overview of safe practice and good maintenance of mini-excavators. 1 p; 89:397

Skid-steer Loaders Offer Versatility and Mobility: Lists dimensions, attachments, abilities, and some costs of using skid-steer loaders to show the versatility of the more than 80 models available. Includes how to move a skid-steer between jobsites. 3 pp; 89:767

FLOORS

Are Thickness Tolerances Realistic for Concrete Floors on Grade? There's a big difference between how floor thicknesses are specified and how most contractors build them. Armand Gustaferrero offers a compromise. 2 pp; 89:389

Floors That Pass the Test: F-number specifications control floor flatness and levelness. This article tells how F-numbers are measured, how construction methods affect flatness and levelness, and how much it costs to build flatter floors. 4 pp; 89:5

Laser-guided Strikeoff Machine Helps Contractor Build Flat Floors Fast: A boom-mounted vibratory strikeoff screed controlled by lasers allows contractors to place more than 20,000 square feet of floor daily. The screed is mounted on a four-wheel-drive vehicle that operates on the subgrade during the floor pour. 2 pp; 89:17

A Proposed Method for Determining Compliance with Floor Thickness Specifications: Disputes about floor thickness can be settled by defining specification compliance, then taking enough measurements to estimate slab thickness with reasonable accuracy. The article gives a statistical procedure for checking compliance. 3 pp; 89:13

Slippery Floors? Try Grooving or Texturing: Smooth concrete floors can be grooved or textured to enhance drainage, increase skid resistance, and reduce slipping accidents. Article compares methods and describes the equipment used. 4 pp; 89:623

FORMWORK

Building Concrete Slabs Composite with Steel Frames: Currently designed concrete slabs composite with steel frames frequently require more shoring and bracing than did older-style composite structures. Contractors must be alert to the need to build safely and accurately, avoiding gross deflection problems. How to deal with camber in both steel beams and concrete slabs is discussed. 4 pp; 89:938

Coordinating Formwork Plans with Overall Project Planning: Factors influencing choice of formwork system are listed, then analyzed in terms of relationship to total project activity and scheduling of other trades on a typical high-rise building. Coordinated timing and efficient use of all hoisting equipment are particularly important. Subcontractor needs which may affect forming system should be considered early in the job. 4 pp; 89:927

Form Ties, Common and Uncommon: Briefly describes eight common form ties—snap, loop, flat, pullout, taper, threaded rod, she-bolt, and coil. Typical load ratings are given for each type, along with information on where and how they are used. Fiber-glass ties are also shown. 5 pp; 89:932

Forming Architectural Concrete Elevator Shafts: Twin 27-story elevator towers were built by adding two L-shaped walls to interior corners of an existing structure. Crane-handled gang form panels equipped with work platforms were reset repeatedly without lowering forms. Contractor matched architectural tie hole and rustication patterns to old concrete surface. 4 pp; 89:285

Forming Convention Center Fins: Intricate pattern of recesses in the arches and beams of the 100-foot-high fins presented a formwork challenge to builders of the San Diego Convention Center. Custom steel forms were carefully detailed to establish crisp smoothness in the white architectural concrete. 4 pp; 89:537

Formwork for Cone, Funnel, and Cylindrical Structures: A reusable system forms cones, funnels, and other symmetrically curved structures using self-supporting steel brace elements with small plywood panels wedged between them. Cylinders are formed with a movable assembly of rigid rings supporting steel sheathing. No form ties are needed and concreting is often continuous without cold joints. System was used recently to build the award-winning Castle Syke water tower in England. 3 pp; 89:369

Self-lifting Forms: Self-lifting forms, either roll-around or post type, speed construction of columns and spandrels in high-rise buildings. Operation of both types is explained and suggestions are given for maintenance and efficient phasing into the construction cycle. 4 pp; 89:919

Use Break-even Analysis to Choose the Lowest Cost Forming Option: Control job forming costs by considering the number of form reuses needed. Classify costs as fixed or variable and determine the most economical forming solution by using break-even analysis. 5 pp; 89:121

HISTORY

Concrete Homes of Yesterday: Pictures and short accounts of some historic concrete houses built between 1850 and 1935. Included are Barrett's gravel wall house in Ohio; Horace Greeley's barn, converted to a residence; Ward's Castle; Mercer's Fonthill in Pennsylvania; an early 20th-century concrete block home; houses by Edison and others, built with modular metal forms; and Frank Lloyd Wright's world-famous Fallingwater. 5 pp; 89:719

Hawaiian King's Public Building Restored: Details on the oldest reinforced concrete public building in the United States still standing and still in use. 1 p; 89:186

HOT WEATHER CONCRETING

Economical Cooling of Hot Weather Concrete: It's best to cool the aggregate to control concrete temperature during hot weather. Aggregate piles can be cooled by evaporation and by spraying the piles directly with a cold water stream. Describes how to use heat balance calculations to find the right mix temperature for different cooling options. Shows how to choose the best cooling option for your application. 4 pp; 89:791

INDEX

Concrete Construction Subject Index: 1988: Listing of 1988 articles in *Concrete Construction* arranged by subject. 17 pp; 89:192

INSPECTION

Abseiling Speeds Exterior Building Inspection: A mountaineering technique replaces conventional access by scaffolding and platforms for building inspection. 2 pp; 89:32

JOINTS

Repairing Joints in Industrial Floors: Gives an illustrated overview of the four main types of industrial floor joint problems and how to repair them. Covers plastic crack-inducing strips, left-in-place metal keys, elastomeric sealants, and high-strength fillers. 4 pp; 89:548

LASERS

Machine Control by Laser: Laser-controlled machines save time and labor in grading, cutting, digging, and finishing operations. This article tells how the system operates. 3 pp; 89:132

LIFT SLAB

Walls and Slab Lifted in Texas: Describes the first U.S. use of a site-cast tilt-up concrete system designed by Mexican structural engineer Pablo Cortina. Involves placing wall and roof panels on foundation floor slab, then lifting roof slab with wall panels connected to it on plastic hinges. The wall panels open up close to final position. 3 pp; 89:861

MANAGEMENT

Advances in Computerized Estimating: The article describes a program that speeds up computerized estimating. 1 p; 89:315

Changing Your Type of Work—Even a Little—Is Risky: Contractors must be cautious of making small and large changes in their work. Their specialties have always brought them success—variations in their formula might not. Describes the danger of switching between public and private work and between union and nonunion work. 3 pp; 89:802

Construction Claims: How to Keep Them from Degenerating into Disputes: Construction claims should be as ordinary as insurance claims. Article gives hints for reducing the likelihood of construction claims degenerating into legal disputes. 3 pp; 89:951

The Fiscal Physical: How to use financial ratios to check the financial health of your company. 4 pp; 89:40

Growing Businesses Can Fail Without Accurate Accounting: You can only make good management decisions with accurate financial information. Recording payables late, in the wrong month, or worse, wrong fiscal year, gives you a false financial picture. 3 pp; 89:1011

Growing Up Alongside Your Construction Firm: As a company grows, its management needs change. Suggests ways to recognize the need for change and how to go about it. 2 pp; 89:944

How to Expand Your Business into a New Location: Expanding a construction business into new geographic areas is risky and the second leading cause of contractor failure. Article describes dangers to avoid and suggests having a withdrawal plan in case a regional office doesn't show expected profits. 5 pp; 89:736

How to Get Paid for Undisclosed Surprises on the Job: Learn how contractors can get paid when an owner holds back superior knowledge about jobsite conditions that cost extra money to fix. 2 pp; 89:582

How to Lower Workers' Compensation Costs: A list of tips on reducing workers' compensation costs. 1 p; 89:328

How to Manage Cash Efficiently: Provides hints for keeping cash available. Suggests using a lockbox service to receive payments so they get into your banking account faster. 2 pp; 89:484

IRC Section 2036(c) Drops the Bomb on Family Businesses: The new 1987 tax code makes it trickier for parents to give a child their construction business and avoid estate taxes. Lists what to watch for and how to get around it. 2 pp; 89:882

Losing a Key Person Sends You Back to Step One: Losing any of the people who are primarily responsible for estimating/sales, field operations, or accounting/management is risky for a construction business. Describes how to identify key people and what to expect from their replacement. 2 pp; 89:874

Myths about Wage-hour Laws: Making wrong assumptions about the federal wage and hour law can be costly to contractors. Six common misbeliefs are described. 2 pp; 89:184

Planning Is the Key to Building More Efficiently: All jobs should have a written plan describing all details necessary to make the job go smoothly. Includes suggestions on how to work with suppliers and subcontractors. Recommends that project managers and superintendents walk the job regularly and hold weekly meetings. 2 pp; 89:806

Proving Claims with Pictures: Using visuals helps build a believable case for damages in the event of a delay, disruption, termination, change order, or change of conditions. 1 p; 89:188

(more)

Softening the Insurance Crunch: The easiest way to reduce insurance costs is to eliminate unnecessary coverages. Decide what risks you can assume, check deductibles, and learn how insurance rates work. Every 5 years, choose a number of local agents and let them bid for your insurance business. **3 pp; 89:146**

Staying out of Court: Contractors and owners are finding that arbitration is a fast, economical way to avoid going to court. **3 pp; 89:166**

Take Time to Check Out Time Provisions in Contracts: Remember to read your contract to make sure the schedule can be met. Surprisingly, few contractors do. Documenting changes helps avoid costly penalties for delay. **1 p; 89:404**

Taking Much Bigger Jobs Can Put You Out of Business: It's risky to take on a job that's much bigger than any job you've done before. Learn how to control the volume growth of your company so you don't get too big and lose your business because you're not ready for the size increase. **6 pp; 89:655**

Treat the Causes, Not the Symptoms of Financial Problems: Learn how to identify the causes of three common financial complaints—low net profit, low gross margin, or low cash. Arrows were left off a diagram illustrating the article. Corrected diagram is in the March 1989 issue, page 332. **2 pp; 89:152**

Why Some Contractors Succeed and Some Don't: Management decisions alone determine whether you succeed or fail in the construction business. Article describes how your construction business must be organized to succeed. It lists 10 risky business activities. **3 pp; 89:574**

PRECAST

Precast Concrete Forms the Backbone of the Channel Tunnel: Describes how the precast units are being created and installed differently on the English and French ends of the Channel Tunnel. **2 pp; 89:664**

PROBLEM CLINIC

Problem Clinic: January (2 pp; 89:46)

- Should Driveway Cracks Be Repaired?
- Sparkle Finish for Concrete Flatwork
- Placing Concrete on Frozen Subgrade

Problem Clinic: February (4 pp; 89:172)

- Specs for Epoxy-coated Welded Wire Fabric
- Keystone Finish for Flatwork
- Shallow Surface Holes That Aren't Popouts
- Bugholes Near the Top of a Wall

Problem Clinic: March (1 p; 89:331)

- Concrete Saw Blade Life

Problem Clinic: April (1 p; 89:402)

- Delayed Setting of Superplasticized Concrete

Problem Clinic: May (1 p; 89:482)

- Joint Filler Problems in an Industrial Floor

Problem Clinic: June (2 pp; 89:572)

- Slab Form Removal in Multistory Work

Problem Clinic: July (1 p; 89:662)

- How to Set Forms for Insulated Slab

Problem Clinic: August (2 pp; 89:742)

- Graphite Form Ties
- Batching Dry Aggregates in Concrete

Problem Clinic: September (2 pp; 89:818)

- Temperature and Humidity Effects on Productivity
- Wood for Formwork
- Percent Solids in Curing Compounds

Problem Clinic: October (3 pp; 89:876)

- More Information on Forming Insulated Slabs
- Expansion Joints Needed for Whitetopped Parking Lot?
- Pinholes in Polyurethane Coating
- Delayed Cracking of a Basement Floor Slab
- Load-bearing Lawns

Problem Clinic: November (1 p; 89:958)

- Painting Concrete in Bright Colors
- Floor Isn't Flat Enough for Racquetball Courts
- Protecting Concrete Exposed to Hydrochloric Acid

Problem Clinic: December (1 p; 89:1020)

- Effect of concrete-making ingredients on chloride ion concentration
- Maximum permitted slump when slump isn't specified

PUMPING

Concrete Pumps Complete Massive Foundation Pour in 13½ Hours: Using nine concrete pumps, workers placed 1,350 cubic yards of concrete during the first hour of a mat foundation pour. During the first 10 hours they placed 9,500 cubic yards. **2 pp; 89:158**

Pumps Keep Arena Concrete Pours on Schedule: Pumping concrete turned out to be faster and less costly than using a crane and bucket for the Minnesota Wolverines arena. Describes how AVR, Inc., in Minneapolis, carved out a ready mix market niche by catering to specialized concrete needs. **2 pp; 89:798**

Trolley System Puts Concrete Pipeline on Wheels: Long pipelines usually require a lot of manpower to guide them around a jobsite. Using a trolley system for supporting and moving concrete pipeline cuts down on manpower greatly. **2 pp; 89:810**

REINFORCEMENT

Preventing Further Corrosion in Repaired Concrete: A sacrificial coating of a zinc-rich resin primer on reinforcing steel may be the solution for the problem of recurring corrosion after repairs are made. Article describes repair procedure. **2 pp; 89:558**

REPAIR

Concrete Sludge-holding Tanks Repaired with Shotcrete and Two Colors of Epoxy Coating: Dry-process shotcreting equipment was used to apply polymer-modified portland cement mortar to concrete sludge-holding tanks needing repair. Next, two coatings of a protective epoxy were applied—the first was red, the second gray. If the gray wears away then the red will show through—indicating that it's time to recoat. **1 p; 89:947**

Cut-out Ribs Shore Water Tunnel During Repair: A custom-built waterblasting unit was used to remove concrete from a Los Angeles water tunnel. Unit made repairs fast, safely, and inexpensively. Compares costs of repair systems. **2 pp; 89:879**

No Downtime Allowed: Concrete repairs at a fertilizer plant were done while the plant was still in operation. Repair materials and methods are described. **2 pp; 89:91**

Perimeter Channel Drain Solves Pool Deck Drainage Problem: Instead of tearing out and replacing a poorly draining concrete pool deck, the contractor installed a continuous channel drain and poured a topping that sloped to the drain. Suspending the PVC drain in the concrete and matching the concrete elevation to the pool edge were problems that were overcome. **3 pp; 89:552**

Repair Widens Bridge and Preserves Original Charm: Repairs on an Ohio bridge used two-directional prestressing, epoxy-coated reinforcing steel, waterproofing membranes, and a drainage system without detracting from its original look. **2 pp; 89:580**

Using Permanent Shoring Jacks to Repair Foundations: For one- and two-story buildings, repairing the foundations using shoring jacks reduces structural distress and disrupts tenants the least. Otherwise, buildings would have to be raised 6 to 10 feet, then reset. San Diego contractor describes his method. **2 pp; 89:666**

RESIDENTIAL CONSTRUCTION

Earth-sheltered Home Shotcreted 4 Inches Thick: A kit for building earth-sheltered residences includes steel beam framework, reinforcing bars, and fabric backing for shotcrete. Typical home requires a 4-inch thickness of shotcrete. Dome and arch shapes designed for Seismic Zone 4 range from 24 feet in diameter to 40x62-foot open-ended arches. **4 pp; 89:711**

Expanded Polystyrene Wall Forms: Concrete house walls are cast in formwork made of expanded polystyrene foam insulation which remains as a permanent part of the wall. Several commercially available forming systems provide 2-inch layers of insulation connected by plastic or galvanized ties unique to each system. Concrete cures under ideal conditions, and the home benefits from energy saving insulation. Various finishes can be used for both interior and exterior walls. 4 pp; 89:697

Home Built with Wood Fiber Concrete Panels: Hollow core panels of sawable, nailable wood fiber concrete form walls and partitions for a 1,200-square-foot house built in Phoenix, Arizona, at a reported cost of about \$25,000. Concrete mix, panel fabrication, and house erection are described. Construction cost breakdown sheet helps builders estimate cost in their own areas. 4 pp; 89:703

RETAINING WALLS

Retaining Wall System Offers Economy, Speed of Construction: A patented, precast retaining wall system goes up fast. Article describes installation at a shopping mall. Because the precast wall isn't as massive as a conventional structure, costs for removing or relocating part of the structure aren't as high as for other systems. 2 pp; 89:398

ROLLER COMPACTED CONCRETE

RCC Paving Record Set: The largest roller compacted concrete paving job (420,000 square yards) was installed during the summers of 1988 and 1989. Describes the mix used and methods of placement and curing. Research was started on some air-entrained RCC pavements at this site. 3 pp; 89:373

SAFETY

How to Safely Use Powder-actuated Tools: Describes precautions to take when loading, using, and storing powder-actuated tools and the powder loads. Operators must be trained by an authorized instructor—usually the manufacturer. OSHA and ANSI have rules for use of these tools. 2 pp; 89:637

OSHA's New Rules for Crane-suspended Personnel Platforms: In October 1988, OSHA issued a new standard to specify the design, construction, testing, and maintenance of frame-suspended personnel work platforms (or man-cages). "Riding the hook" is still illegal, but workers may be hoisted in man-cages if OSHA's regulations are followed (described in article) and there's no other way to do the job. 6 pp; 89:560

SAWING

Dry-cutting Saws Allow Pile Cutting in Cold Weather: By allowing workers to cut concrete piles in cold weather, dry-cutting, air-powered saws helped keep a pile driving project on schedule. 2 pp; 89:653

Wire Concrete Saw Proves Its Mettle: A concrete saw uses wire studded with diamond beads to cut thick sections of concrete using very little water. A pulley system connects the wire to a power unit. 3 pp; 89:310

SEALERS

Kansas Study Questions Silane Sealer Effectiveness: A study by the Kansas DOT found that silanes didn't keep salt out of bridge decks any better than linseed oil treatments. Asphalt sealers seemed to work well. 2 pp; 89:324

SHOTCRETE

Shotcrete Restores Fire Island Light: Steel-fiber-reinforced shotcrete has replaced a 1912 layer of reinforced concrete protecting the brick structure of the Fire Island Lighthouse. Public donations paid for restoration of the historic 1858 light. 2 pp; 89:400

SLABJACKING

Raising a Floor without Closing the Store: Using button bit drills and a newly designed grout pump, a contractor slabjacked a retail store floor. The job was done during three late-night 8-hour periods when the 24-hour store was closed. All the shelves of

merchandise stayed in place. The slabjacking had to use their hands and feet to feel whether or not the slab was moving into place—floor tiles covered the slab and shelves blocked other visual clues. 2 pp; 89:640

SOIL COMPACTION

Soil Compaction in Residential Construction: Compacting soil during construction costs much less than correcting settlement problems after they occur. Learn why and where soil compaction is needed and which equipment to use for which types of soils. 3 pp; 89:855

TESTING

Directory of Specialized Concrete Evaluation and Testing Services: Listing shows names of firms that provide specialized evaluation or testing services to the concrete industry. Firms are listed by state. 13 pp; 89:34

Fast Field Test for Chloride Ion: Rapid field test method for chloride in concrete uses drilled-out dry powder samples, immersing them in an extraction solution. Quick readings taken at 1 to 10 minutes give immediate guidance to the investigator. Chloride content values approaching those of the standard acid titration method can be obtained after the sample has been in the extraction solution 24 hours. Case histories show method in use on parking decks and a bridge. 4 pp; 89:644

Uniform Strength Test Results Reduce Concrete Cost: Strength test results from ready mixed concrete batches are used to estimate concrete uniformity. More uniform concrete requires less overdesign and reduces concrete cost. ACI has a computer program that helps you quickly check your progress. 4 pp; 89:727

TILT-UP

Tilt-up Fights Noise Pollution: Tilt-up method was used to build a mile of sound barrier walls along a busy Winnipeg thoroughfare. Panels from 7 to 14 feet high were slipped into slots in the supporting cast-in-place columns. The stack-cast panels have exposed aggregate on one face and fractured ribs on the other. 4 pp; 89:999

Using Tilt-up for Salt Storage Saves Money: It's less expensive and faster to build salt storage buildings from tilt-up construction than igloo-type wood-frame. 1 p; 89:591

TOOLS

Choosing the Right Jackhammer Tool for the Job: Each jackhammer tool has a correct use. Article describes how to use breakers, cutters, spades and frost wedges, bushing tools, and drivers and tampers. 3 pp; 89:631

Hand-held Hydraulic Tools for Contractors: The article gives advantages of hydraulic tools and describes power source requirements. It also tells how to use an existing power source to run hydraulic tools and gives cost information. 4 pp; 89:295

WHITETOPPING

Owners Choose Concrete Parking Lot to Reduce Costs: Whitetopping was eventually chosen over repaving with asphalt or concrete for part of a church warehouse parking lot. Concrete reconstruction was the first choice, but as construction began, the site conditions made it much more expensive than first thought, so whitetopping which wasn't originally considered was done instead with good results. 3 pp; 89:995

Whitetopped Parking Lot Report Card: Describes five sites that were whitetopped and how they are doing. The oldest is 8 years old. Heavily illustrated, this overview shows that whitetopping has reduced life-cycle costs and that the pavements are performing well. 5 pp; 89:380

Whitetopping Demonstration at the Silverdome: Team approach to concrete promotion was used in a cooperative whitetopping demonstration at the Pontiac, Michigan, Silverdome where 3½ inches of concrete was placed over badly deteriorated asphalt. How and why to use teamwork like this were explained at a World of Concrete '89 seminar and documented in seminar handout. 3 pp; 89:305